

Claims

1. A method for marking an electronic document as a valid document comprising the steps of:
 - 5 a) examining a digital signature associated with the document,
 - b) examining the structure associated with the document, andwherein if the steps examining the digital signature and the structure associated with the document
10 determine that the signature and structure are valid for that document then the document is marked as a valid document, and if either of the steps of examining the digital signature or the structure
15 determine that the digital signature or structure are not valid for that document, then the other of the steps of examining the digital signature or structure is terminated prior to concluding whether that step is valid, and the document is marked as an invalid
20 document.
2. The method as claimed in claim 1 wherein the step of examining the digital signature comprises the steps of:
 - 25 a) extracting a digital signature from the document,
 - b) determining whether the signature references a digital certificate and returning a valid response if the signature references a digital certificate, and if the signature does not
30 reference a digital certificate terminating the examination of the signature and structure.
3. The method as claimed in claim 2 further comprising the steps of:

- a) on receiving a valid response from the determination of whether the signature references a certificate, determining whether the certificate is a valid certificate, and
 - 5 b) on confirming that the signature references a certificate and the certificate is a valid certificate marking the signature as being validly confirmed.
- 10 4. The method as claimed in claim 3 wherein the step of examining the digital signature further includes the step of:
- 15 a) marking the signature as invalid if the step of determining whether the certificate is a valid certificate fails, and terminating the examination of the signature and structure.
- 20 5. The method as claimed in claim 2 or claim 4 wherein the step of terminating the examination of the signature and structure comprises the step of flagging a shared memory location within a computer processor so as to effect a marking within the shared memory location that the examination of the signature has
- 25 failed.
6. The method as claimed in any preceding claim wherein the step of examining the document structure comprises the steps of:
- 30 a) determining if the document is structurally valid, and
 - b) determining if the document is syntactically valid.

7. The method as claimed in claim 6 wherein the step of determining if the document is structurally valid comprises the steps of:
- 5 a) extracting information from the document relating to the structure of the document,
 - b) comparing the extracted information against a series of stored rules so as to determine whether the extracted information matches the stored information, and
 - 10 c) on determining that the extracted information matches the stored information marking the document as structurally valid.
8. The method as claimed in claim 6 wherein the step of
- 15 determining if the document is syntactically valid comprises the steps of:
- a) extracting information from the document relating to the syntax of the document,
 - b) comparing the extracted information against a
 - 20 series of stored rules so as to determine whether the extracted information matches the stored information, and
 - c) on determining that the extracted information matches the stored information marking the
 - 25 document as syntactically valid.
9. The method as claimed in claim 7 wherein on determining that the document is not structurally valid comprises the performing the additional step of:
- 30 a) flagging a shared memory location with a marker so as to identify that the structure has been found invalid.
10. The method as claimed in claim 8 wherein on
- 35 determining that the document is not syntactically

valid comprises the performing the performing the additional step of:

- a) flagging a shared memory location with a marker so as to identify that the syntax has been found invalid.

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11. The method as claimed in claim 9 wherein the marking of the shared memory location with a marker so as to identify that the structure has been found invalid effects a termination of the examination of the digital signature and the document structure.

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12. The method as claimed in claim 10 wherein the marking of the shared memory location with a marker so as to identify that the syntax has been found invalid effects a termination of the examination of the digital signature and the document structure.

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13. The method as claimed in claim 1 wherein a shared memory location is accessed during both of the steps of examining the signature and examining the document structure, the noting of a marked failure within the shared memory effecting a termination of the examination of the signature or the document structure.

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14. The method as claimed in claim 13 wherein the noting of a marked failure within the shared memory location is effected by incrementing or decrementing a value stored within the shared memory location, and on accessing the shared memory location any deviation between the actual value measured at the shared memory location and a previously measured value results in a termination of the examination of the signature or the document structure.

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15. The method as claimed in claim 1 wherein the steps of examining the document signature and the document structure are conducted as multiple threads within the same process.
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16. A computer system adapted for the concurrent processing of digitally signed document, the system comprising:
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- a) a signature verification module adapted to verify the signature associated with a document,
 - b) a document structure verification module adapted to verify the structure of a document,
 - c) a state processor, and
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- wherein both the signature verification module and the document structure verification module interface with the state processor during verification of the signature and verification of the document structure, and wherein the state processor is adapted in response
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- to a verification failure of either the signature or structure to flag the failure and wherein the signature verification module and the document structure verification module are adapted to terminate verification upon detection of the failure flag
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- arising from the failure of the other verification process.